SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc.(Physics) END SEMESTER EXAMINATIONS NOVEMBER -2023
SEMESTER - II
22UPHCT2003 - Acoustics and Thermodynamics

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. What are free, damped and forced vibrations? Give examples.

2. Distinguish between loudness and intensity of sound.

3. Mention the properties of ultrasonic waves.

4. List down the applications of ultrasonics in various fields.

5. Write down the statements of all the laws of thermodynamics.

6. Differentiate between diesel and petrol engines.

7. Write a brief note on thermodynamic potentials.

8. Arrive at an equation for the change in entropy in reversible processes.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks$)$

9. Arrive at the Sabine's relation for the reverberation time.

10. Explain in detail how ultrasonic waves is produced using the magnetostriction oscillator. Also, mention the advantages and drawbacks of this method.

11. Explain in detail how the first law of thermodynamics is applied to isothermal and adiabatic processes.

12. Arrive at an equation for the efficiency of a Carnot engine.

13. Derive all the Maxwell's thermodynamic relations.

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